Site: ARKANSAS CITY
ID # KSD980500789
Break: 8.0
Other:
0701 9/24/02

Five-Year Review Report

Second Five-Year Review Report
for
Arkansas City Dump Site
Arkansas City, Kansas

August 2002

Prepared By:
Kansas Department of Health and Environment
Bureau of Environmental Remediation
Topeka, Kansas

Approved by:

Michael J. Sanderson
Director
Superfund Division

Date:

9-24-02

40260806
SUPERFUND RECORDS

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List of Acronyms

CERCLA	Comprehensive Environmental Response Compensation and Liability Act
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Difference
FY	Fiscal Year
KDHE/BER	Kansas Department of Health and Environment/Bureau of Environmental Remediation
KDHEL	Kansas Department of Health and Environment Laboratories
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priority List
OU	Operable Unit
pH	Power of hydrogen (negative log base 10 of the hydrogen ion concentration)
RA	Remedial Action
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SARA	Superfund Amendment Reauthorization Act
SSC	State Superfund Contract

Executive Summary

The remedy for the Arkansas City Dump Superfund Site in Arkansas City, Kansas called for neutralization and stabilization of acid waste, covering the treated waste with a vegetative cap, and using institutional controls to prevent future disturbance of the waste. The site achieved construction completion on September 8, 1992. The first 5-year review report was signed by the EPA Superfund Division Director, Michael J. Sanderson, on August 22, 1997. This second 5-year review was initiated for completion within five years of the first 5-year review.

The assessment of this 5-year review reached the same conclusions as the previous 5-year review. That assessment is that the remedy was constructed in accordance with the requirements of the Record of Decision (ROD). A second Record of Decision was issued to express the determination that the remedy expressed in the ROD for Operable Unit 1 (OU 1) was sufficient to provide protectiveness for the entire site and no additional actions were required. Threats relative to CERCLA appear to have been remediated, although refinery-related waste has been left in place at the site. The site has been removed from the National Priority List (NPL). This document recommends that a third five-year review be completed in 2007. If after the third five-year review, and confirmation through sampling that the acid waste is neutralized, it may be recommended that no additional 5-year reviews be conducted.

5-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): Arkansas City Dump		
EPA ID (from WasteLAN): KSD980500789		
Region : 7	State: KS	City/County: Arkansas City/Cowley
SITE STATUS		
NPL status: ___Final __X Deleted _____ Other (specify)		
Remediation status (choose all that apply) _____Under Construction _____Operating __X Complete		
Multiple OUs? ___YES _X NO	Construction Completion Date 9 /08/1992	
Has site been put into reuse ____YES _X NO		
REVIEW STATUS		
Lead agency: ___ EPA _X_State ___Tribe ___Other Federal Agency _____		
Author name: Robert J. Weber		
Author title: Environmental Geologist	Author affiliation: Kansas Dept. of Health and Env	
Review Period: May 2002 to August 2002		
Date(s) of site inspection: 5/1/02 and 7/3/02		
Type of review: __X Post SARA ____Pre-SARA ___NPL-Removal Only ___Non-NPL Remedial Action Site ___NPL State/Tribe-lead ___Regional Discretion		
Review number: ___1 (first) _X_ 2 (second) ____3 (third) ___Other (specify)		
Triggering Action: ___Actual RA On-site Construction at OU #__ ___Actual RA Start at OU# ___ ___Construction Completion __X Previous Five-Year Review Report ___Other (specify)		
Triggering action date(from WasteLAN) 8/22/1997		
Due date (five years after triggering action date): 8/22/2002		

Five-Year Review Summary Form, cont'd.

Issues:

No issues are present at the site. The site is well maintained and all posting is in place. The cover appears to be in good condition. A gravel drive that was present on as-built drawings is located over a portion of the northern cover, but no settling has been observed. The site has been mowed and is unused.

Recommendations and Follow-up Actions:

Hazards at this site have been remediated. There are still remaining solid waste issues with the material buried at the site. The city, in coordination with the state, will continue to monitor this as it would any other non-hazardous solid waste landfill. The city's restrictions currently in place will enable the city to deal with any continuing aesthetic or non-hazardous solid waste issues. Any future use of the site should be compatible with these issues. KDHE/BER will issue the city a letter transmitting these conclusions and recommendations and attach a copy of this Five-Year Review Report.

Given the waste remaining in place, KDHE/BER recommends an additional Five-Year Review. At the time of the future Five-Year Review and assuming that the waste is confirmed to be neutralized, a determination can be made whether or not to discontinue future Five-Year Reviews.

Protectiveness Statement(s):

Immediate threats at the site have been addressed and the remedy is protective of human health and the environment. The acid hazardous waste has been neutralized via the remedial action. No additional threat from CERCLA hazardous wastes is known to be present.

Long-term Protectiveness:

The long-term protectiveness of the Remedial Action was demonstrated during the previous Five-Year Review. Conditions have not changed and the site remains protective and there are no foreseeable conditions that will result in the Remedial Action failing. Remedial action objectives have been achieved and the long-term protectiveness of the site is assured.

Other Comments:

No other comments required.

Arkansas City Dump Superfund Site
Arkansas City, Kansas
Second/Final Five-Year Review Report

I. Introduction

The purpose of the Five-Year Review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to address them.

This Five-Year Review report is prepared pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews.*

The U.S. Environmental Protection Agency (EPA) interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

In coordination with EPA, the Kansas Department of Health and Environment/Bureau of Environmental Remediation (KDHE/BER) conducted the second Five-Year Review of the remedy implemented at the Arkansas City Dump Superfund Site in Arkansas City, Kansas. This review was conducted by the state's project manager for the site from May through July 2002. This report documents the results of the review.

This is the second Five-Year Review of the Arkansas City Dump Site. The triggering action for this statutory review is the date of the previous Five-Year Review dated August 22, 1997.

II. Site Chronology

A chronology of site events is presented below in tabular format.

Event	Date
Milliken Company operated Oil Refinery on site	1916-1925
Fire destroyed much of the refinery	1925
Others continued using the refinery and cracking plant	1925-1931
Unregulated disposal of domestic and solid waste intermittently	1931-1981
Site proposed for NPL	12/30/1982
Final listing on NPL	09/08/1983
First Remedial Investigation completed	04/01/1983
Second Remedial Investigation completed	08/30/1986
Record of Decision OU 1	09/29/1988
Proposed Plan document prepared for OU 2 ROD	08/04/1989
Record of Decision OU 2 Final Decision	09/21/1989
Remedial Design complete	09/10/1991
Remedial Action commences	09/10/1991
Award of Contract 09/10/1991 - Start of Remedial Action -5 year review trigger	09/10/1991
RA physical construction completed	08/12/1992
Pre-Final Inspection	08/19/1992
Close Out Report signed (Construction Completion Achieved)	09/08/1992
Site Delcted from NPL	03/01/1996
First Five-Year Review Completed	08/22/1997

III. Background

Physical Characteristics

The Arkansas City Dump site consists of approximately 200 acres. Only an area of approximately three acres required treatment. The site is in the western portion of Arkansas City, Kansas adjacent to the Arkansas River and Highway 166 (also known as Madison Street). Figures 1 and 2 present the location of the site. Arkansas City is a city of about 12,500 residents located in Cowley County. Most of the site and all of the portion where remediation was required is located south of Madison Street. A small deposit of sludge that was not acidic and did not require treatment was found beneath the surface immediately north of Madison Street, also adjacent to the river. The land that contains the treated soil is owned by Sybrant Warehouse and the City of Arkansas City.

Land and Resource Use

From 1916 to 1931 the primary use of the site was as an oil refinery and cracking plant. From 1931 to 1981 the site was generally abandoned and the major activity was unregulated dumping of domestic and solid waste. Figure 3 presents the general historic features of the site. Some small businesses have occupied portions of the site but the remediated waste cells occupy portions of the site that have not been used since the abandonment. Superfund regulated waste was treated during the remedial action. Figure 4 presents the areas of treated waste. Petroleum products remain at the site but these are excluded from the regulatory authority of CERCLA. The cells where the acid waste was neutralized, *i.e.* where the remedial action took place, are covered with a vegetative cap and clearly posted with signs.

The acid waste subject to CERCLA authorities has been remediated. Groundwater was not a CERCLA issue at this site. Petroleum products in soil and groundwater within the site area, if determined to pose a threat to human health and the environment, may be addressed by a state program.

History of Contamination

The oil refinery operations at the Arkansas City Dump site resulted in two principal waste types. Only one of these waste types was subject to the CERCLA regulations the other relates to petroleum products which are specifically excluded from the CERCLA authority. The refining operations generated acidic sludge wastes, which were buried on the site, or simply abandoned at the ground surface. Some of the wastes were acidic enough to be classified as hazardous wastes because of their low pH under the Resource Conservation And Recovery Act (RCRA). Also, some of these waste are also identified as process hazardous wastes under RCRA. The Superfund remedial action addressed these types of releases.

Initial Response

Only one response action was undertaken at this site. The original plan was to initiate action to stabilize the acidic sludge under Operable Unit 1 (OU 1) and develop a final remedy to address all issues at the site under Operable Unit 2 (OU 2). Once the initial action (OU 1) was completed it was determined that no action would be required for OU 2, therefore OU 2 was a no action Record of Decision.

Basis for Taking Action

The sole basis for taking action at this site under CERCLA authorities was that the wastes on site were acidic enough to be classified as hazardous wastes because of their low pH under RCRA. Exposures to soil from the site were associated with a risk due to the low pH of the acidic waste buried at the site. Other risks at the site were due to substances falling under the *petroleum exclusion* of CERCLA/SARA.

IV. Remedial Actions

Remedy Selection

The remedy for the site was selected in the Record of Decision (ROD) signed on 9/29/88 by the EPA Regional Administrator, Morris Kay. An Explanation of Significant Difference (ESD) for the first ROD was implemented to accommodate a technical difficulty in executing the original ROD. This did not affect the remedy or the outcome of the remedy only the technical and physical means of implementation. A subsequent Record of Decision for the remainder of the site, signed on 9/19/89, was a no action ROD. The determination that no additional action was required was based on the limited authority under CERCLA/SARA to deal with contaminants designated under the *petroleum exclusion*. Thus the OU 1 remedial action is the only action that is to be involved with the five-year review. The 1988 ROD did not specifically state the Remedial Action Objectives, but from context they are as follows:

- Neutralize acid sludge to render the sludge non-hazardous.
- Use a technique for neutralizing sludge to minimize or eliminate the release of sulfur dioxide gas.
- Cover treated sludge to prevent any contact with neutralized sludge in the case some hazard remains as a result of incomplete neutralization.
- Initiate institutional controls that prohibit actions that would impact the neutralized sludge in the future.

The institutional controls were initially required to ensure that the treated material was not disturbed. Additional study of the remainder of the site to determine if there was other CERCLA waste that required

treatment made it prudent to restrict access. As it turned out later, the determination was made that there was no other CERCLA waste other than the acidic sludge. The institutional controls were not immediately lifted in order to ensure that all of the CERCLA waste had been neutralized. Investigations completed during the first five-year review demonstrated that CERCLA waste had been neutralized.

Remedy Implementation

This was an EPA fund-lead site. Once the execution of the site-specific State Superfund Contract (SSC) for the site was complete, the action was initiated. The SSC was completed on September 23, 1991. Remedial action began in December of 1992. The selected remedy incorporated exposing small portions of the acid sludge and mixing a strong base, lime, with the sludge to neutralize the sludge. After mixing the sludge was then covered and a new quantity of acid sludge was exposed for neutralization. This process greatly reduced the amount of sulfur dioxide released to the atmosphere and thus improved the quality from not only a health perspective but from an aesthetic one as well. Once the acidic sludge was neutralized, a cover to allow vegetation was placed over the treated area.

System Operation/Operation and Maintenance

There has been no need for an ongoing Operations and Maintenance function other than mowing and inspection of the cover. The city has maintained the site under an agreement with the State of Kansas.

V. Progress Since Last Five-Year Review

Since the last five-year review, the site has been deleted from the NPL. The cover remains effective, there is no evidence that there has been any change in the site since the last five-year review, and the institutional controls are still intact. No additional activity has been performed at the site.

VI. Five-Year Review Process

Administrative Component

In the Spring of FY 2002 the site was reassigned to Robert J. Weber of KDHE/BER, with the sole purpose of ensuring that the upcoming Five-Year Review was completed. The Five-Year Review was initiated with a file review and site visits on May 1 and July 3, 2002 and was completed with the signing of the five-year review report with a signature page attached to this report.

Community Involvement

A notice was submitted by the KDHE Public Information Office on June 28, 2002 to Sedgwick and Cowley County media including the Associated Press, the Harris News Service, the Kansas Information Network/WIBW Radio, and the Mid-America News Network. The local newspaper, The

Arkansas City Traveler, published the notice on July 1, 2002. The community was notified that a Five-Year review was being conducted for the Arkansas City Dump. A brief description and location of the site along with work to be performed was provided. Contact information was provided should any community members wish to obtain more information or participate in the Five-Year Review. A copy of the notice is attached as Appendix A.

Document Review

Documents reviewed for this Five-Year Review by EPA and KDHE/BER included the ROD for OU 1, the No Action ROD for OU2, the previous five-year review report, and the NPL deletion package for the site.

Data Review

No new data has been developed since the last Five-Year Review. Previous file data was reviewed to determine whether there was reason to believe that additional data was required. It was determined that the data at hand were sufficient.

Site Inspection

Site inspections were carried out on May 1 and July 3, 2002. A copy of the Five-Year Review Site Inspection Checklist is attached as Appendix B. During the first site inspection on May 1, 2002, the project manager visited the site to get a general overview of the location and determine the condition of the cover as well as the activities on and around the site. The site cover was intact and vegetated, with no evidence of significant erosion. The site remains unoccupied. There does not appear to be any immediate likelihood for the site or its immediate area to undergo any significant land use change in the foreseeable future. There is no evidence that any of the institutional controls for the site have been violated. A second site inspection visit was performed on July 3, 2002 during soil sampling activities. The second site inspection confirmed the observations of the first site inspection.

During the first site visit, surface water samples were collected for onsite pH analysis. Whatman pH test strips were immersed in the surface water for one minute. The test strips were then removed and compared to a colorimetric slide for the appropriate pH value. Figure 5 presents the locations of surface water sampling. The pH analysis results were 7 for each sample collected. Table 1 presents the results of surface water onsite analysis. Each location was sampled twice to confirm the previous result. Based on the results in Table 1, no acidic surface waters were observed onsite.

During the second site visit, soil samples were collected for offsite laboratory analysis. A KDHE/BER Geoprobe 5400 drilling rig was used to advance a four-foot Macro core sampler with a single-use disposable acetate sample liner into the treated waste. The vertical soil profile was visually logged from ground surface to the total depth, 12 feet, of each boring. Soil boring logs are provided in

Appendix C. Upon completion of soil sampling activities, soil borings were plugged with bentonite. Soil samples were collected from the four-to-five-foot depth interval and the nine-to-ten-foot depth interval. Samples were transferred from the acetate sample liner into laboratory-provided containers. The containers were labeled, placed into individual plastic bags, stored in a cooler with ice, and delivered to KDHE Laboratories (KDHEL) on the same day under chain-of-custody protocol. Copies of the KDHEL chain-of-custody forms are provided in Appendix D. The results of pH soil analysis indicate that the remedy is performing as designed. Values of pH in soil ranged from 6.30 to 12.47. RCRA guidelines consider wastes that have pH values of less than 2 or greater than 12.5 to be corrosive and hazardous. No samples collected for pH analyses exceeded these ranges. Table 2 and Appendix E present the results of soil pH analysis.

Interviews

During the site inspections, the project manager interviewed city employees. There was general agreement that the site had remained undisturbed. They also indicated that the site would not be subject to pressure for use change in the near future. The community as a whole is not in a cycle of growth and there are additional more desirable lands for development if the trend shifts towards the positive.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

The neutralization of the acid sludge prescribed in the ROD for OU 1 was accomplished at the time of the remedial action. No additional activity was/is necessary to treat that contaminant/hazard. The ROD for OU 2 called for no additional action. The institutional controls were established in OU 1 until the actions expected to be prescribed in OU 2 could be implemented. The ROD for OU 2 called for no further action, however the institutional controls are still in place and functioning,.

Since no additional action is required at this site there is no opportunity for system optimization.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

There have been no changes in the physical conditions at the site that would affect the protectiveness of the remedy. Nor have there been any changes in the relative standards, exposure pathways, toxicity or other contaminant characteristics that would change the decisions previously made.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There has not been any information that has come to light that would call into question the protectiveness of the remedy.

Technical Assessment Summary

Based on the data reviewed, the site inspections, and interviews, the remedy is functioning as intended in the ROD. There have been no changes to the site that would affect the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

VIII. Issues

There are no issues concerning this remedy.

IX. Recommendations and Follow-Up Actions

KDHE/BER recommends performing an additional Five-Year Review prior to discontinuing the Five-Year Review process at the site. At the time of the future Five-Year Review, if no new findings are presented that determine the site to be unprotective of human health and the environment, the site will be proposed to be removed from the Five-Year Review process. This decision will be based on the continued validity of the following findings.

- No CERCLA hazardous substance remains at this site
- The site has been de-listed from the NPL
- Previous five-year review has not identified any potential for adverse effect on the public health or the environment, due to any contaminant subject to CERCLA authority.
- Current Five-Year Review has similar findings to previous Five-Year Review

KDHE/BER recommends that City of Arkansas City retain institutional controls at site. This recommendation is based on the following.

- Solid waste is buried at the site
  - Disturbing solid waste may result in odor problems
  - Disturbing solid waste may result in aesthetic problems
  - There may be some unknown hazardous components to the solid waste
- Some petroleum product waste is most likely still present
  - Currently contained contaminants may be mobilized by disturbance
  - Odor problems may result from disturbance

- Change in situation may result in greater infiltration
- Disruption of cap may result in a change of conditions that will disturb the natural attenuation process currently containing petroleum products on site.

X. Protectiveness Statement

The remedy is protective of human health and the environment. No CERCLA regulated contaminants are known to remain on site. The threats that can be addressed by CERCLA have been removed and the RAOs have been met. No additional action is required. Therefore; "Because the remededial actions at all OUs are protective, the site is protective of human health and the environment."

XI. Next Review

The next Five-Year Review is to be completed five years after the signature date of this five year review.

TABLES

Table 1

Results of Surface Water Analysis
Second Five-Year Review
Arkansas City Dump/Old Milliken Refinery
1409 W. Madison Street (Northern Waste Pit) and
City Property Immediately South (Visible Waste Area)
Arkansas City, Kansas

by
The Kansas Department of Health and Environment/Bureau of Environmental Remediation
1000 SW Jackson Street, Suite 410, Topeka, Kansas 66612-1367

for
The U.S. Environmental Protection Agency, Region VII
901 North 5th Street, Kansas City, Kansas 66101

Sample Identification	**Onsite Analysis (repeated two times each)**
	pH (negative log base 10 of the hydrogen ion concentration (H^+)) unitless
Whatman pH Test Strip Colorimetric Method	
Culvert #4 (North-South Concrete Drainage Tube)	7
Culvert #5 (East-West Concrete Drainage Tube)	7
Concrete-Paved Ditch Rip-Rap Outfall	7
Southwest Runoff Collection/Settling Pond	7

Table 2

Results of Soil Analysis
Second Five-Year Review
Arkansas City Dump/Old Milliken Refinery
1409 W. Madison Street (Northern Waste Pit) and
City Property Immediately South (Visible Waste Area)
Arkansas City, Kansas

by
The Kansas Department of Health and Environment/Bureau of Environmental Remediation
1000 SW Jackson Street, Suite 410, Topeka, Kansas 66612-1367

for
The U.S. Environmental Protection Agency, Region VII
901 North 5th Street, Kansas City, Kansas 66101

Sample Identification	**Offsite Laboratory Analysis**
	pH (negative log base 10 of the hydrogen ion concentration (H^+)) unitless
EPA Method SW-846 9040	
B-1 (4-5')	8.16
B-1D (14-15') duplicate of B-1 (4-5')	8.10
B-1 (9-10')	8.77
B-2 (4-5')	12.41
B-2 (9-10')	6.30
B-3 (4-5')	12.44
B-3D (14-15') duplicate of B-3 (4-5')	12.39
B-3 (9-10')	12.39
B-4 (4-5')	8.32
B-4 (9-10')	12.47
Quality Assurance/Quality Control Samples by EPA Method 150.1	
Trip Blank-1	6.06
Rinseate Blank-1	6.00

FIGURES

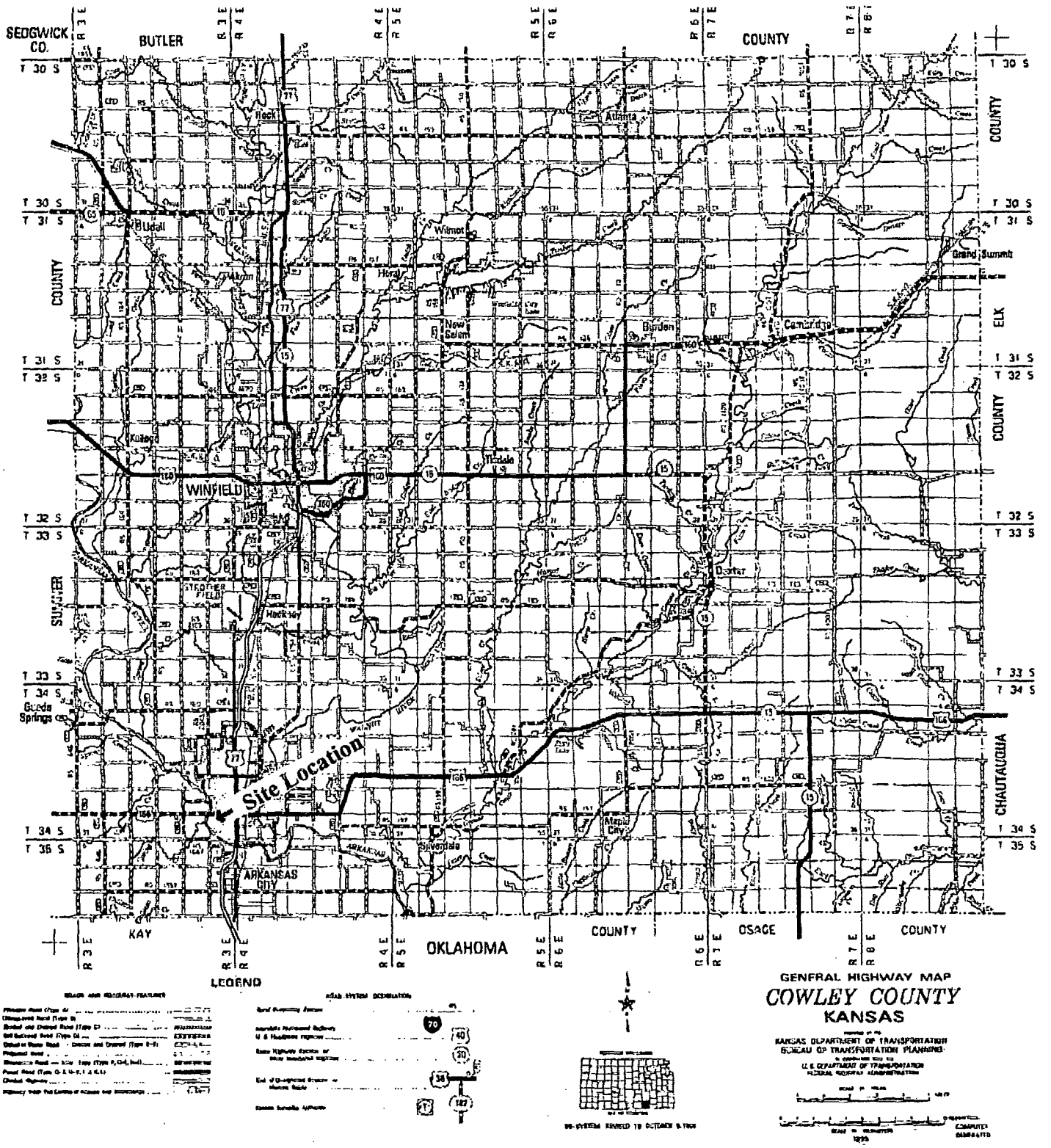
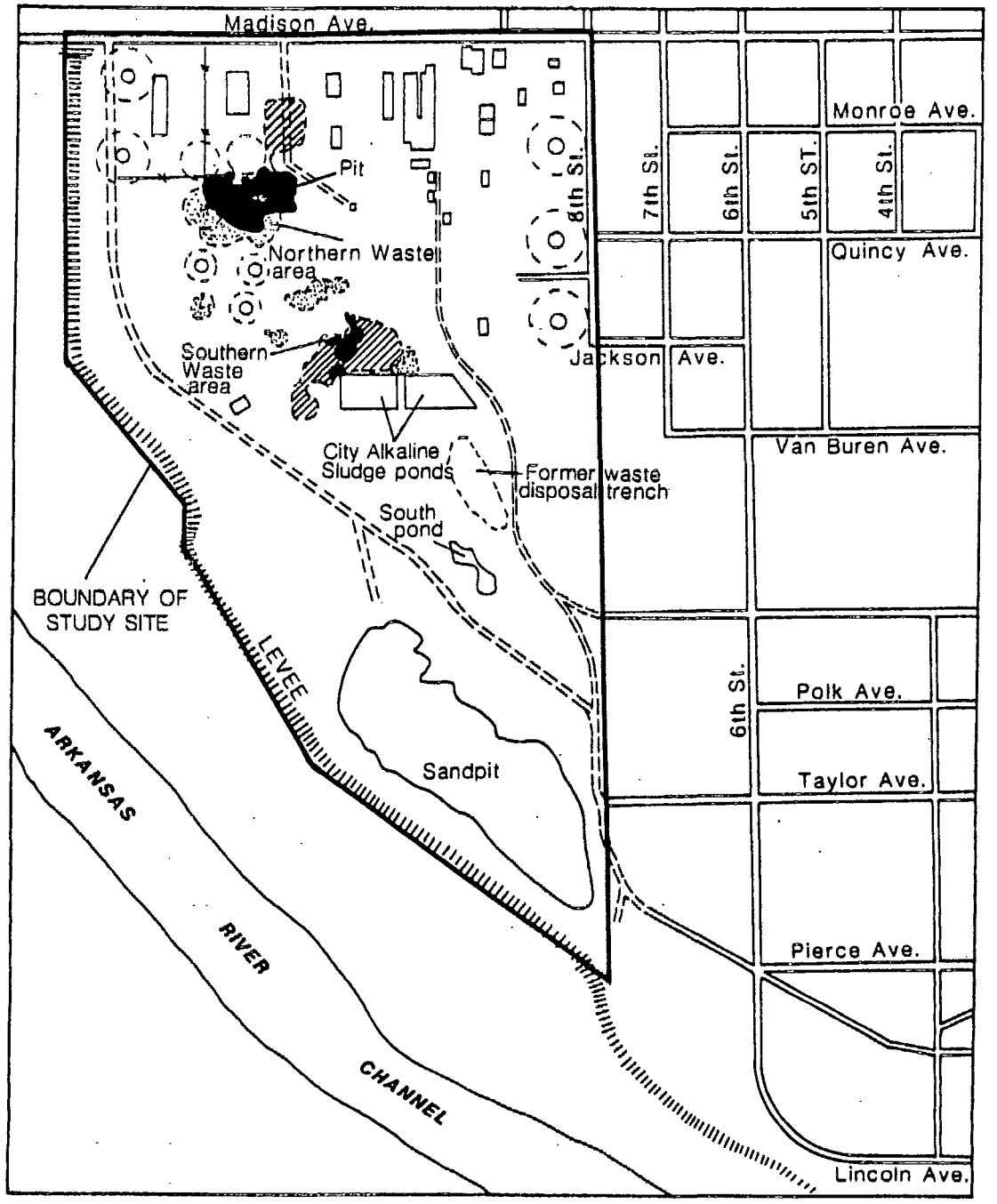
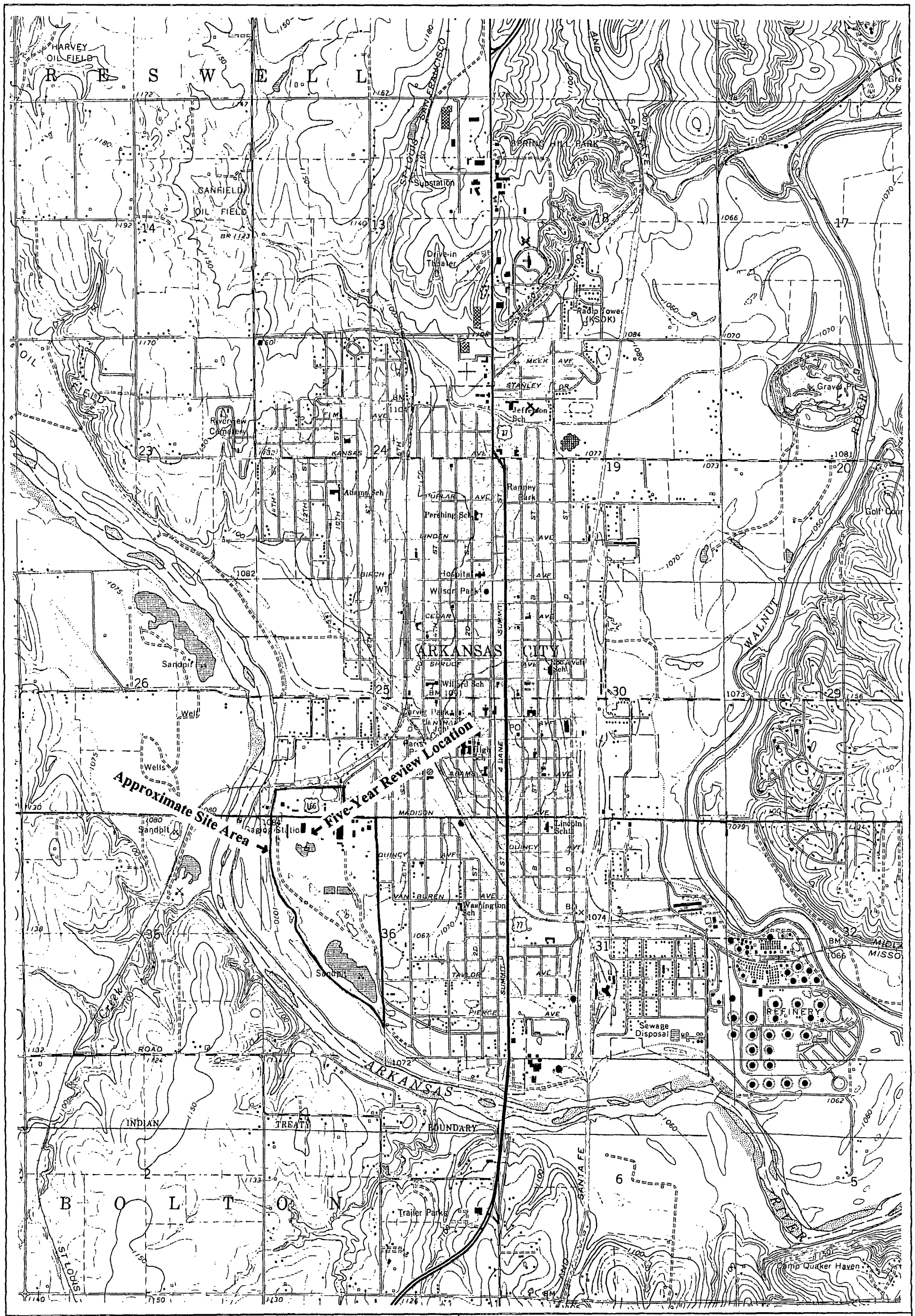


Figure 1
Site Location Map



Adapted from:
Figure 3, Location of former oil tanks, waste areas, unvegetated areas, and selected features of Arkansas City waste site (Phase-IIA Remedial Investigation of the Arkansas City Dump Site, Provisional Draft, Volume I, August 1986, Arkansas City, Kansas, U.S. Geological Survey, Lawrence, Kansas)
Scale: Not to Scale (NTS)

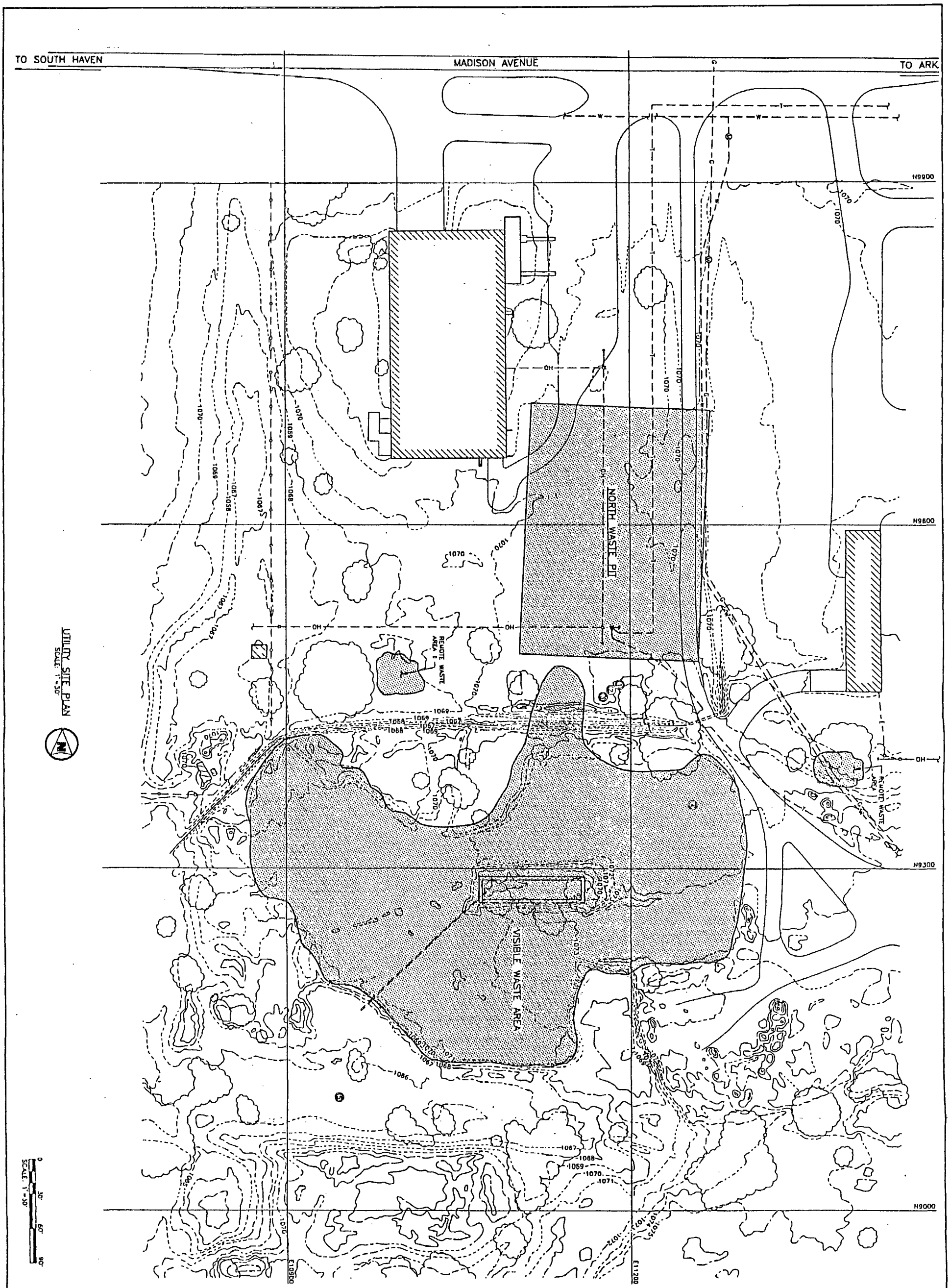
FIGURE 3
Historic Site Features Map
Kansas Department of Health and Environment
Bureau of Environmental Remediation
1000 SW Jackson, Suite 410, Topeka, Kansas 66612



Adapted from:
Arkansas City Quadrangle, Arkansas City, Kansas
1965, Photorevised 1979
USGS 7.5 Minute Series (Topographic)
Scale: 1:24,000

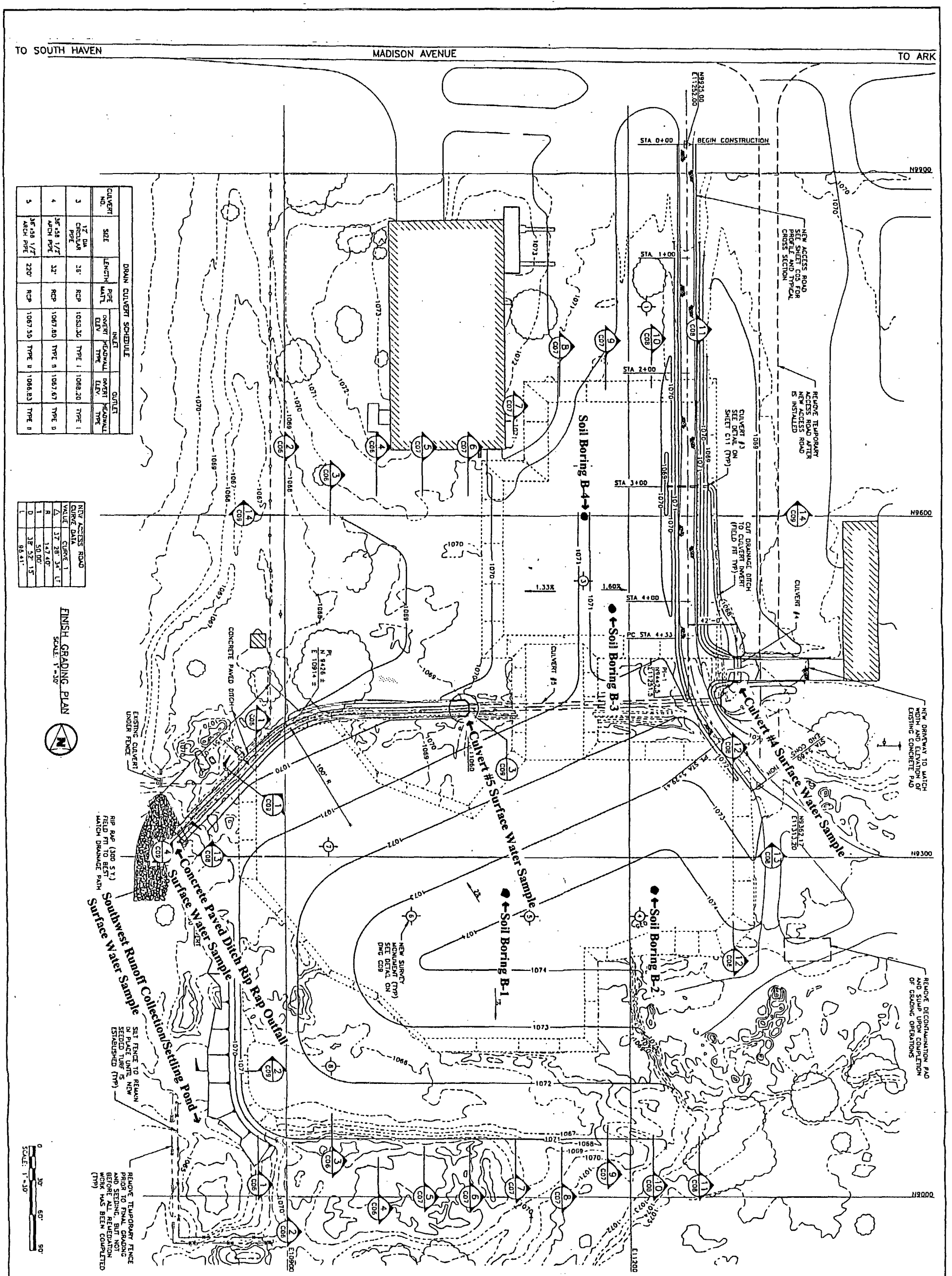
N

FIGURE 2
Site Area Map
Kansas Department of Health and Environment
Bureau of Environmental Remediation
1000 SW Jackson, Suite 410, Topeka, Kansas 66612



Adapted from:
Utility Site Plan, CO4, Final Remedial Action Completion Report, North Waste Area Operable Unit, Arkansas City, Kansas, Volume I of III Narrative Report and Appendices A-D, November 1992 by Fluor Daniel, Inc. Dallas Texas for U.S. Environmental Protection Agency, Region VII, Kansas City, Kansas
Scale: Not To Scale

FIGURE 4
Soil Treatment Areas
Kansas Department of Health and Environment
Bureau of Environmental Remediation
1000 SW Jackson, Suite 410, Topeka, Kansas 66612



Adapted from:
Finish Grading Plan, CO3, Final Remedial Action Completion Report, North Waste Area Operable Unit, Arkansas City, Kansas, Volume I of III Narrative Report and Appendices A-D, November 1992 by Fluor Daniel, Inc. Dallas Texas for U.S. Environmental Protection Agency, Region VII, Kansas City, Kansas
Scale: Not To Scale

FIGURE 5
Five-Year Review Surface Water and Soil Sampling Locations
Kansas Department of Health and Environment
Bureau of Environmental Remediation
1000 SW Jackson, Suite 410, Topeka, Kansas 66612

APPENDICES

APPENDIX A

KDHE Public Information Office
News Release Record

Topic: KDHE Performs Five-Year Assessment of Site

File Number: 02-130

Author: Mike

Date: June 28, 2002

Approvals:

_____ Mike Heideman
_____ Originator _____
_____ Director Ron Hammerschmidt, Rob Weber
_____ Secretary Graeber/Sharon Patnode

Courtesy Copies: ___ ___ Originator _____

___ x Bureau Director Gary Blackburn
___ x Division Director Ron Hammerschmidt
___ x District Office(s) (IDs) 731
___ ___ Local Health Dept(s). _____
___ x Legal Office
___ x Secretary Graeber
___ x 733 Governor's Office
___ ___ Other _____

Media: Fax to Sedgwick and Cowley Co. media

___ x 409 Associated Press (when mailed)
___ x 351 Carol Crupper, Harris News Service (when mailed)
___ x 277 Kansas Information Network/WIBW Radio (when mailed)
___ x 414 Mid-America News Network (when mailed)

Environmental *(always send to these media on environmental releases):*

___ ___ 739 EPA Public Affairs ___ ___ 639 R.P. Publishing

Nursing Homes *(always send to these media on nursing home releases):*

___ ___ 154 Ranney, LJW (all attachments) ___ ___ 736 LTC Ombudsman's Office
___ ___ 738 Dept. on Aging ___ ___ 651 KABC
___ ___ 653 KAHSA ___ ___ 655 KHCA

Image Not Available

KANSAS
DEPARTMENT OF HEALTH & ENVIRONMENT

BILL GRAVES, GOVERNOR
Clyde D. Graeber, Secretary

For Immediate Release
June 28, 2002

Contact: Rob Weber, Project Manager
785-296-8801

KDHE Performs Five-Year Review of Former Refinery Site

The Kansas Department of Health and Environment (KDHE) has begun a five-year environmental review at the site of the former Arkansas City Dump Site/Old Milliken Refinery. The site is located east of the Arkansas River and both north and south of Madison Ave. in Arkansas City.

"This type of review determines if a previous cleanup is still performing as designed," said Environmental Geologist Rob Weber, KDHE project manager for the site. "The focus of this five-year review will be an area of treated soil at 1409 S. Madison Ave. and city property located immediately to the south. In 1992, the EPA neutralized acidic sludge from the former petroleum refinery with cement kiln dust, and then placed it into two containment areas. These areas were then capped with clay soil and seeded with grass."

The areas have been maintained with signs and regular mowing of the grass cover since completion in 1992. The first five-year review performed for the site in 1997 by KDHE concluded that no acidic sludge was present. Weber stated that KDHE anticipates completing this second five-year review by August 22, with soil drilling activities to be completed in July.

For information regarding the five-year review process and how to participate, please contact Rob Weber, KDHE project manager, at (785) 296-8801 or rweber@kdhe.state.ks.us .

APPENDIX B

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION 5/1/02 AND	
Site name: Arkansas City Dump	**Date of inspection:** 7/3/02
Location and Region: Arkansas City, KS (EPA Region VII)	**EPA ID:** KSD 980 500 789
Agency, office, or company leading the five-year review: KDHE/BER	**Weather/temperature:** Clear to overcast ≈ 80°F.

Remedy Includes: (Check all that apply)

- ✓ Landfill cover/containment
- ✓ Access controls
- ✓ Institutional controls
- Groundwater pump and treatment
- Surface water collection and treatment
- Other _____
- Monitored natural attenuation
- Groundwater containment
- Vertical barrier walls

Attachments: Inspection team roster attached Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** CURT FREELAND (Name) CITY MANAGER (Title) 5/1/02 (Date)
   Interviewed at site (at office) by phone Phone no. 620 - 441 - 4415
   Problems, suggestions; Report attached NO PROBLEMS WERE IDENTIFIED

2. **O&M staff** GART BAUGHER (Name) CITY EMPLOYEE (Title) 5/1/02 (Date)
   Interviewed (at site) at office by phone Phone no. _____
   Problems, suggestions; Report attached NO PROBLEMS WERE IDENTIFIED

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

N/A = not applicable

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; Report attached _____

4. **Other interviews** (optional) Report attached.

N/A

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1.	**O&M Documents**			
	O&M manual	Readily available	Up to date	N/A
	As-built drawings	Readily available	Up to date	N/A
	Maintenance logs	Readily available	Up to date	N/A
	Remarks			
2.	**Site-Specific Health and Safety Plan**	Readily available	Up to date	N/A
	Contingency plan/emergency response plan	Readily available	Up to date	N/A
	Remarks			
3.	**O&M and OSHA Training Records**	Readily available	Up to date	N/A
	Remarks			
4.	**Permits and Service Agreements**			
	Air discharge permit	Readily available	Up to date	N/A
	Effluent discharge	Readily available	Up to date	N/A
	Waste disposal, POTW	Readily available	Up to date	N/A
	Other permits	Readily available	Up to date	N/A
	Remarks			
5.	**Gas Generation Records**	Readily available	Up to date	N/A
	Remarks			
6.	**Settlement Monument Records**	Readily available	Up to date	N/A
	Remarks			
7.	**Groundwater Monitoring Records**	Readily available	Up to date	N/A
	Remarks			
8.	**Leachate Extraction Records**	Readily available	Up to date	N/A
	Remarks			
9.	**Discharge Compliance Records**			
	Air	Readily available	Up to date	N/A
	Water (effluent)	Readily available	Up to date	N/A
	Remarks			
10.	**Daily Access/Security Logs**	Readily available	Up to date	N/A
	Remarks			

IV. O&M COSTS

1. **O&M Organization**

(State in-house) — Contractor for State
PRP in-house — Contractor for PRP
Federal Facility in-house — Contractor for Federal Facility
Other CITY OF ARKANSAS CITY

2. **O&M Cost Records** N/A

Readily available — Up to date
Funding mechanism/agreement in place
Original O&M cost estimate_____ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ Breakdown attached
Date Date Total cost
From_____ To_____ _____ Breakdown attached
Date Date Total cost
From_____ To_____ _____ Breakdown attached
Date Date Total cost
From_____ To_____ _____ Breakdown attached
Date Date Total cost
From_____ To_____ _____ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: N/A

V. ACCESS AND INSTITUTIONAL CONTROLS (Applicable) N/A

A. Fencing

1. **Fencing damaged** Location shown on site map Gates secured (N/A)

Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** (Location shown on site map) N/A

Remarks SIGNS ARE POSTED AND MAINTAINED AROUND PERIMETER OF TREATED AREA

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented — Yes (No) N/A
Site conditions imply ICs not being fully enforced — Yes (No) N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _____
Frequency _____
Responsible party/agency CITY OF ARKANSAS CITY
Contact CURT FREELAND (Name) CITY MANAGER (Title) 5/1/02 (Date) _____ (Phone no.)

Reporting is up-to-date — (Yes) No N/A
Reports are verified by the lead agency — (Yes) No N/A

Specific requirements in deed or decision documents have been met — (Yes) No N/A
Violations have been reported — Yes No (N/A)
Other problems or suggestions: Report attached
P/A

2. **Adequacy** (ICs are adequate) ICs are inadequate N/A
Remarks _____

D. General

1. **Vandalism/trespassing** Location shown on site map (No vandalism evident)
Remarks _____

2. **Land use changes on site** (N/A)
Remarks _____

3. ***Land use changes off site*** (N/A)
Remarks _____

VI. GENERAL SITE CONDITIONS

A. Roads (Applicable) N/A

1. **Roads damaged** Location shown on site map (Roads adequate) N/A
Remarks _____

B. Other Site Conditions

Remarks N/A

VII. LANDFILL COVERS (Applicable) N/A

A. Landfill Surface

1. **Settlement** (Low spots) Location shown on site map (Settlement not evident)
   Areal extent_____ Depth_____
   Remarks_____

2. **Cracks** Location shown on site map (Cracking not evident)
   Lengths_____ Widths_____ Depths_____
   Remarks_____

3. **Erosion** Location shown on site map (Erosion not evident)
   Areal extent_____ Depth_____
   Remarks_____

4. **Holes** Location shown on site map (Holes not evident)
   Areal extent_____ Depth_____
   Remarks_____

5. **Vegetative Cover** Grass (Cover properly established) No signs of stress
   Trees/Shrubs (indicate size and locations on a diagram)
   Remarks_____

6. **Alternative Cover (armored rock, concrete, etc.)** (N/A)
   Remarks_____

7. **Bulges** Location shown on site map (Bulges not evident)
   Areal extent_____ Height_____
   Remarks_____

8. **Wet Areas/Water Damage** (Wet areas/water damage not evident)
   - Wet areas — Location shown on site map — Areal extent_____
   - Ponding — Location shown on site map — Areal extent_____
   - Seeps — Location shown on site map — Areal extent_____
   - Soft subgrade — Location shown on site map — Areal extent_____

   Remarks_____

9. **Slope Instability** Slides — Location shown on site map (No evidence of slope instability)
   Areal extent_____
   Remarks_____

B. Benches Applicable (N/A)

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** — Location shown on site map — (N/A or okay)
   Remarks_____

2. **Bench Breached** — Location shown on site map — (N/A or okay)
   Remarks_____

3. **Bench Overtopped** — Location shown on site map — (N/A or okay)
   Remarks_____

C. Letdown Channels (Applicable) (N/A)

(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** — Location shown on site map — (No evidence of settlement)
   Areal extent_____ Depth_____
   Remarks_____

2. **Material Degradation** — Location shown on site map — (No evidence of degradation)
   Material type_____ Areal extent_____
   Remarks_____

3. **Erosion** — Location shown on site map — (No evidence of erosion)
   Areal extent_____ Depth_____
   Remarks_____

4. **Undercutting** Location shown on site map (No evidence of undercutting)
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ (No obstructions)
Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
(No evidence of excessive growth)
Vegetation in channels does not obstruct flow
Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations Applicable (N/A)

1. **Gas Vents** Active Passive
Properly secured/locked Functioning Routinely sampled Good condition
Evidence of leakage at penetration Needs Maintenance
(N/A)
Remarks_____

2. **Gas Monitoring Probes**
Properly secured/locked Functioning Routinely sampled Good condition
Evidence of leakage at penetration Needs Maintenance (N/A)
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
Properly secured/locked Functioning Routinely sampled Good condition
Evidence of leakage at penetration Needs Maintenance (N/A)
Remarks_____

4. **Leachate Extraction Wells**
Properly secured/locked Functioning Routinely sampled Good condition
Evidence of leakage at penetration Needs Maintenance (N/A)
Remarks_____

5. **Settlement Monuments** Located Routinely surveyed (N/A)
Remarks_____

E. Gas Collection and Treatment Applicable (N/A)

1. **Gas Treatment Facilities**
   Flaring Thermal destruction Collection for reuse
   Good condition Needs Maintenance
   Remarks_____

2. **Gas Collection Wells, Manifolds and Piping**
   Good condition Needs Maintenance
   Remarks_____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   Good condition Needs Maintenance N/A
   Remarks_____

F. Cover Drainage Layer (Applicable) N/A

1. **Outlet Pipes Inspected** (Functioning) N/A
   Remarks_____

2. **Outlet Rock Inspected** (Functioning) N/A
   Remarks_____

G. Detention/Sedimentation Ponds (Applicable) N/A

1. **Siltation** Areal extent_____ Depth_____ N/A
   (Siltation not evident)
   Remarks_____

2. **Erosion** Areal extent_____ Depth_____
   (Erosion not evident)
   Remarks_____

3. **Outlet Works** (Functioning) N/A
   Remarks_____

4. **Dam** (Functioning) N/A
   Remarks_____

H. Retaining Walls Applicable (N/A)

1. **Deformations** Location shown on site map Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____

2. **Degradation** Location shown on site map Degradation not evident
   Remarks_____

I. Perimeter Ditches/Off-Site Discharge (Applicable) N/A

1. **Siltation** Location shown on site map (Siltation not evident)
   Areal extent_____ Depth_____
   Remarks_____

2. **Vegetative Growth** Location shown on site map N/A
   (Vegetation does not impede flow)
   Areal extent_____ Type_____
   Remarks_____

3. **Erosion** Location shown on site map (Erosion not evident)
   Areal extent_____ Depth_____
   Remarks_____

4. **Discharge Structure** (Functioning) N/A
   Remarks_____

VIII. VERTICAL BARRIER WALLS Applicable (N/A)

1. **Settlement** Location shown on site map Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Performance Monitoring** Type of monitoring_____
   Performance not monitored
   Frequency_____ Evidence of breaching
   Head differential_____
   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES (Applicable) N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines — Applicable (N/A)

1. **Pumps, Wellhead Plumbing, and Electrical**
   Good condition All required wells properly operating Needs Maintenance N/A
   Remarks_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   Good condition Needs Maintenance
   Remarks_____

3. **Spare Parts and Equipment**
   Readily available Good condition Requires upgrade Needs to be provided
   Remarks_____

B. Surface Water Collection Structures, Pumps, and Pipelines — (Applicable) N/A

1. **Collection Structures, Pumps, and Electrical**
   (Good condition) Needs Maintenance
   Remarks_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   (Good condition) Needs Maintenance
   Remarks_____

3. **Spare Parts and Equipment**
   Readily available Good condition Requires upgrade Needs to be provided
   Remarks N/A

C. Treatment System Applicable (N/A)

1. **Treatment Train** (Check components that apply)
   - Metals removal — Oil/water separation — Bioremediation
   - Air stripping — Carbon adsorbers
   - Filters_____
   - Additive (*e.g.*, chelation agent, flocculent)_____
   - Others_____
   - Good condition — Needs Maintenance
   - Sampling ports properly marked and functional
   - Sampling/maintenance log displayed and up to date
   - Equipment properly identified
   - Quantity of groundwater treated annually_____
   - Quantity of surface water treated annually_____

   Remarks_____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   N/A — Good condition — Needs Maintenance

   Remarks_____

3. **Tanks, Vaults, Storage Vessels**
   N/A — Good condition — Proper secondary containment — Needs Maintenance

   Remarks_____

4. **Discharge Structure and Appurtenances**
   N/A — Good condition — Needs Maintenance

   Remarks_____

5. **Treatment Building(s)**
   N/A — Good condition (esp. roof and doorways) — Needs repair
   Chemicals and equipment properly stored

   Remarks_____

6. **Monitoring Wells** (pump and treatment remedy)
   Properly secured/locked — Functioning — Routinely sampled — Good condition
   All required wells located — Needs Maintenance — N/A

   Remarks_____

D. Monitoring Data N/A

1. Monitoring Data
   Is routinely submitted on time — Is of acceptable quality

2. Monitoring data suggests:
   Groundwater plume is effectively contained — Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
   Properly secured/locked Functioning Routinely sampled Good condition
   All required wells located Needs Maintenance (N/A)
   Remarks

X. OTHER REMEDIES N/A

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

THE REMEDY IS EFFECTIVE AND FUNCTIONING. NO EROSION OR BARE SPOTS WERE NOTED ON THE SOIL-TREATMENT CONTAINMENT-CELL COVER. WATER IS effectively DRAINED FROM THE SITE VIA CONSTRUCTED CONCRETE DRAINAGE CULVERTS AND DITCHES. RIP RAP REMAINS IN PLACE AND THE RETENTION POND IS INTACT.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

THE CITY MAINTAINS THE SITE THROUGH REGULAR MOWING AND VERIFICATION THAT SIGNS REMAIN POSTED. THE CITY HAS ENSURED THAT INSTITUTIONAL CONTROLS ARE ENFORCED.

C. Early Indicators of Potential Remedy Problems N/A

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

N/A

D. *Opportunities for Optimization* N/A

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

N/A

C2-018-00009-6

ARKANSAS CITY SUPERFUND SITE
OPERATION AND MAINTENANCE PLAN
INSPECTION CHECKLIST

1.0 General Information: FIVE-YEAR REVIEW INSPECTION

1.1 Inspector: Robert J. Weber

1.2 Date: 7/3/02

1.3 Date of Last Inspection: MAY 1, 2002

2.0 Inspection and Maintenance

2.1 Surface Features

2.1.1 Vegetative Cover

a. Routine Maintenance-Describe Activity: MOWING

b. Damages Noted From Last Inspection: ____Yes ✓No
If yes, have they been repaired? ____Yes ____No

c. New Damages Noted - Describe: _____

2.1.2 Surface Erosion

a. Routine Inspection Activity: SITE WALK FOR FIVE YEAR REVIEW

b. Erosion Noted in Last Inspection: ____Yes ✓No
If yes, describe: _____

c. New Erosion Noted (note if the 1½ gravel layer is visible): _____

2.1.3 Look for and note evidence of the following items:

N/A a. Removal of waste material or hazardous substances left at the site at the conclusion of the remedial action;

N/A b. Transport, disposal , abandonment, or placement of waste material, hazardous substances, or solid waste at the site;

N/A c. Removal or altering of the "No Dumping" signs installed on site;

N/A d. Construction of structure, permanent or otherwise, such as buildings through the soil cap;

N/A e. Change or altering of the drainage surface water flow patterns onto or from the site;

ARKANSAS CITY SUPERFUND SITE
OPERATION AND MAINTENANCE PLAN
INSPECTION CHECKLIST
(CONTINUED)

DATE: 7/3/02

N/A f. Pumping, extracting, or injecting water causing a change in the groundwater level of more than one foot;

N/A g. Extraction of groundwater for domestic use or consumption or for use in food preparation or handling;

N/A h. Removal or damage to elevation monuments or monitoring wells left at the site;

N/A i. Production of food or crops at the site for human or animal consumption, or production of food or crops using water or soil form the site for human or animal consumption;

N/A j. Alteration modification or removal of the vegetative cover installed as part of the remedial action;

N/A k. Use of herbicides, pesticides, fertilizers, or other agricultural chemicals which are not approved for use by EPA for the site or the use of products in a manner inconsistent with the label instructions;

N/A l. Heavy equipment on the site;

N/A m. Storage of commercial products or chemicals on the site in quantities other than those which are necessary for the day-to-day operations of any EPA and KDHE approved occupants; and

N/A n. Dumping of gravel or any small (1-inch or less in diameter) rock onto the site.

Observations: SITE APPEARS TO BE MAINTAINED IN GOOD CONDITION WITH SIGNS POST AROUND THE PERIMETER.

Robert J. Weber — 7/3/02

INSPECTOR — KDHE/BER — DATE

APPENDIX C

HTW DRILLING LOG

HOLE NO. B-1

1 COMPANY NAME: KDHE/BER	2. DRILLING SUBCONTRACTOR: KDHE/BER
SHEET 1 OF 1 SHEETS 2	
3. PROJECT: FIVE YEAR REVIEW ARKANSAS CITY DUMP/OLD MILLIKEN REFINERY	4 LOCATION: SOUTH OF 1409 W. MADISON ARKANSAS CITY KS
5 NAME OF DRILLER: JOHN CREGAN	6. MANUFACTURER'S DESIGNATION OF DRILL: GEOPROBE 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE 5400; FORD F-350; MACRO SAMPLER; ACETATE LINER	8 HOLE LOCATION: WEST SIDE OF VISIBLE WASTE AREA
	9. SURFACE ELEVATION: N/A
	10 DATE STARTED: 7/3/02 — 11. DATE COMPLETED: 7/3/02
12 OVERBURDEN THICKNESS: >12'	15 DEPTH GROUNDWATER ENCOUNTERED: N/A
13 DEPTH DRILLED INTO ROCK: 0'	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14 TOTAL DEPTH OF HOLE: 12'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	N/A	N/A	PH -			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	BENTONITE	N/A		Robert J. Weber

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	0	CLAY, SOME ORGANIC MATTER 0-6"	N/A	N/A		N/A	START: 0825
	1	BROWN, MOIST MEDIUM STIFF TRACE SILT					
	2	1.5 inch GRAVEL LAYER DARK BROWN SILTY CLAY MOIST HYDROCARBON ODOR - SLIGHT TRACE GRAVEL					TIMES FOR INTERVAL 0-4' 0830
	3	MEDIUM STIFF TO STIFF					
	4	SAME			B-1 4-5' 0840		4-8' TIME: 0840
	5			DUPLICATE of B-1 4-5' →	B-1D 1445 1000		

HTW DRILLING LOG

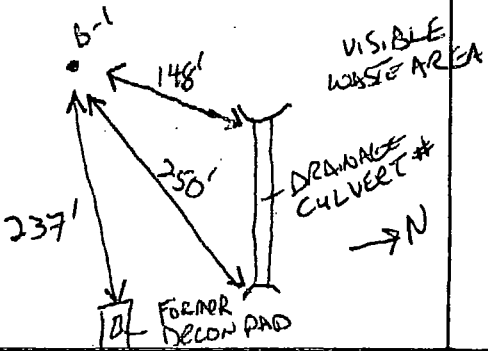
HOLE NO. B-1

PROJECT FIVE YEAR REVIEW ARKANSAS CITY DUMP / OLD MILLIKEN REFINERY

INSPECTOR Robert J Weber

SHEET OF 2 SHEETS 2

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	5	SAME	N/A	N/A		N/A	
	6						4-5' SAMPLE INTERVAL
	7						
	8	SAME			B-1 9-10' 0900		
	9						TIME FOR 8-12' 0900
	10	GRAY FINE TO MEDIUM SAND MOIST LOOSE HYDROCARBON ODOR					
	11						
	12	TOTAL DEPTH = 12'	NO GROUNDWATER ENCOUNTERED				



BACKFILLED W/ BENTONITE

PROJECT		HOLE NO.
ARKANSAS CITY DUMP / OLD MILLIKEN REFINERY	FIVE YEAR REVIEW	B-1

MRK FORM JUN 89 55-2

HTW DRILLING LOG

HOLE NO. B-2

1 COMPANY NAME: KAHE/BER	2. DRILLING SUBCONTRACTOR: KAHE/BER
SHEET 1 OF 1 SHEETS 2	
3. PROJECT: FIVE YEAR REVIEW ARKANSAS CITY DUMP/OLD MILLIKEN REFINERY	4. LOCATION: 1409 W. MADISON ARKANSAS CITY KS
5 NAME OF DRILLER: JOHN CREGAN	6. MANUFACTURER'S DESIGNATION OF DRILL: GEOPROBE 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE 5400; FORD F-350; MACRO SAMPLER; ACETATE LINER	8 HOLE LOCATION: SOUTH OF 1409 W MADISON IN VISIBLE WASTE AREA; EASTERN SIDE OF
	9 SURFACE ELEVATION: N/A
	10 DATE STARTED: 7/3/02 — 11. DATE COMPLETED: 7/3/02
12 OVERBURDEN THICKNESS: 12'	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13 DEPTH DRILLED INTO ROCK: 0'	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14 TOTAL DEPTH OF HOLE: 12'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	N/A	N/A	PH —			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	BENTONITE	N/A		Robert J. Webee

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	0	BROWN CLAY MOIST ROOTS + ORGANIC MATERIAL FROM 0-1'	N/A	N/A	6-4' INTERVAL TIME 0925 → 1	N/A	START AT 0923
	1	MEDIUM STIFF TO SOFT					
	2	DARK BROWN GRAY MOIST MEDIUM STIFF HYDROCARBON ODOR					
	3						
	4	SAME STIFF			B-2(4-5') 0935 4-6' INTERVAL		4-8' INTERVAL 0935
	5						

HTW DRILLING LOG

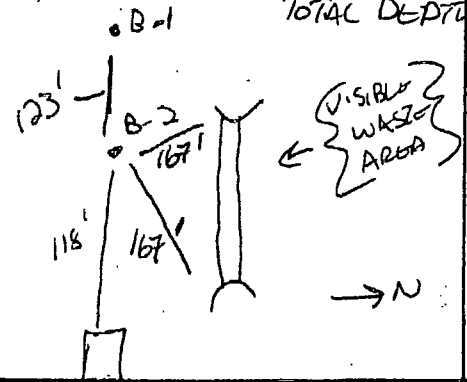
HOLE NO. B-2

PROJECT FIVE YEAR REVIEW ARKANSAS CITY DUMP / OLD MILLIKEN REFINERY

INSPECTOR ROBERT J. WEBER

SHEET OF 2 SHEETS 2

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	5		N/A	N/A		N/A	
		SAME, STIFF					
	6	HYDROCARBON ODOR					4-5' INTERVAL 0935
	7						
	8	SAME HYDROCARBON ODOR					
	9				B-2 9-10' 0945		INTERVAL TIME 0945
	10						
	11	GRAY SAND FINE TO MEDIUM MOIST LOOSE HYDROCARBON ODOR					
	12	TOTAL DEPTH = 12'		NO GROUND WATER ENCOUNTERED			



BACKFILLED W/ BENTONITE

HTW DRILLING LOG

HOLE NO. B-3

1 COMPANY NAME KOHE/BER	2. DRILLING SUBCONTRACTOR KOHE/BER
SHEET 1 OF 1 SHEETS 2	
3. PROJECT FIVE TEAR REVIEW ARKANSAS CITY DUMP OLD MILLIKEN REFINERY	4 LOCATION SOUTH OF 1409 W MADISON ARKANSAS CITY KS
5 NAME OF DRILLER JOHN CREGAN	6. MANUFACTURER'S DESIGNATION OF DRILL GEOPROBE 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE 5400; FORD F-350; MACRO SAMPLER; ACETATE LINER	8. HOLE LOCATION 1409 W. MADISON SOUTHERN PART OF NORTHERN WASTE AREA
	9. SURFACE ELEVATION N/A
	10 DATE STARTED 7/3/02 — 11. DATE COMPLETED 7/3/02
12 OVERBURDEN THICKNESS 12'	15. DEPTH GROUNDWATER ENCOUNTERED N/A
13. DEPTH DRILLED INTO ROCK 0'	16 DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED N/A
14 TOTAL DEPTH OF HOLE 12'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY) N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	N/A	N/A	pH -			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	BENTONITE			Robert S. Weber

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	0	BROWN CLAY MOIST M. STIFF ROOTS	N/A	N/A		N/A	START AT 1010
	1	YELLOW-SHRED CLAY MOIST M-STIFF					0-4' INTERVAL 1012
	2	TRANS LAYER DARK BROWN SILTY CLAY MOIST STIFF					
	3						
	4	DARK BROWN SILTY CLAY MOIST ST. FF HYDROCARBON ODOR		DUPLICATE	B-3 4-5' @1020; B-3D 14-15' @1100		4-8' INTERVAL @ 1020
	5						

HTW DRILLING LOG

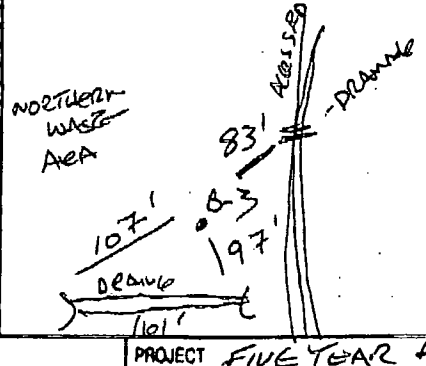
HOLE NO. B-3

PROJECT FIVE YEAR REVIEW ARKANSAS CITY DUMP/OLD MILLIKEN REFINERY

INSPECTOR Robert J. Weber

SHEET OF 2 SHEETS 2

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	5		N/A	N/A		N/A	4-8' INTERVAL @ 1020
	6	SAME					
	7						
	8	DARK BROWN SILTY CLAY MOIST STIFF HYDROCARBON ODOR					8-12' INTERVAL @ 1035
	9						
	10	BROWN MEDIUM SAND WET LOOSE HYDROCARBON ODOR			B-3 9-10' 1035		
	11						
	12	TOTAL DEPTH @ 12' WET FROM 10-12' BACKFILLED W/ BENTONITE					



HTW DRILLING LOG

HOLE NO. B-4

1 COMPANY NAME KDHE/BER	2. DRILLING SUBCONTRACTOR KDHE/BER
SHEET 1 OF 1 SHEETS 2	
3. PROJECT FIVE YEAR REVIEW ARKANSAS CITY DUMP/OLD MILLIKEN REFINERY	4. LOCATION SOUTH OF 1409 W MADISON ARKANSAS CITY, KS
5 NAME OF DRILLER JOHN CREGAN	6. MANUFACTURER'S DESIGNATION OF DRILL GEOPROBE 5400
7 SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE 5400; FORD-350; MACRO SAMPLER; ACETATE LINER	8 HOLE LOCATION 1409 W MADISON AVE NORTHERN PORTION OF NORTHERN WASTEAREA
	9. SURFACE ELEVATION N/A
	10 DATE STARTED 7/3/02 — 11. DATE COMPLETED 7/3/02
12 OVERBURDEN THICKNESS >12'	15. DEPTH GROUNDWATER ENCOUNTERED N/A
13 DEPTH DRILLED INTO ROCK 0'	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED N/A
14. TOTAL DEPTH OF HOLE 12'	17 OTHER WATER LEVEL MEASUREMENTS (SPECIFY) N/A

18 GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19 TOTAL NUMBER OF CORE BOXES
N/A	N/A	N/A	N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	N/A	N/A	pH-			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	BENTONITE	N/A		

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	1	BROWN SILTY CLAY ROCKS MOIST YELLOWISH SOFT RED SILTY CLAY MOIST M. STIFF TO STIFF	N/A	N/A		N/A	START AT 1050 0-4' INTERVAL @ 1057
	2	TERRACE LATER DARK BROWN SILTY CLAY MOIST MEDIUM STIFF TO STIFF SLIGHT HYDROCARBON ODOR					
	3						
	4				B-4 4-5' @ 1115		4-8' INTERVAL @ 1100
	5						

HTW DRILLING LOG

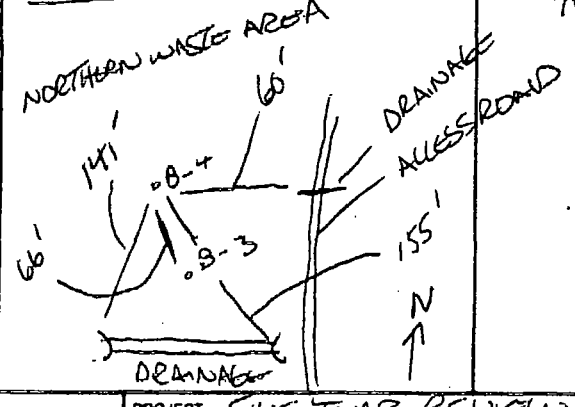
HOLE NO. B-4

PROJECT FIVE YEAR REVIEW ARKANSAS CITY DUMP/OLD MILLIKEN REFINERY

INSPECTOR Robert J. Weber

SHEET OF 2 SHEETS 2

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS h
	5		N/A	N/A		N/A	
		SAND. HYDROCARBON ODOR					4-8' 1100
	6				B-4 4-5' 1115		
	7						
	8	SAME					8-12' INTERVAL @ 1130
	9				B-4		
	10	BROWN FINE TO MEDIUM SAND MOIST TO WET					
	11						
	12	TOTAL DEPTH = 12' NO GROUND WATER ENCOUNTERED BACKFILLED W/ BENTONITE					



APPENDIX D

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-1 (4-5') ARK CITY Dump
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 0840
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code:
EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
ET OR "EZ" FOR SPECIAL PROJECTS

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

ONE 4oz SOIL JAR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem _____ DO _____ NUT _____ HM _____ CN _____ O&G _____ Phenol _____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: ET OR "EZ" FOR SPECIAL PROJECTS billing - STATE GENERAL FUND
ARK CITY DUMP C2-015-00009

Chain of Custody:

Date 7/3/02 Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By DIV. OF H&E LABORATORIES

Date _____ Relinquished By _____ Received By _____

2002 JUL -3 PM 3:48

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-04/98 *Instructions for this form are printed on the reverse side*

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-1 D (14-15') ARK CITY DUMP
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 1006
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code: EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
ET or "EZ" FOR SPECIAL PROJECTS

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

ONE 40Z SOIL JAR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: ET or "EZ" for special projects billing - STATE GENERAL FUND
ARK CITY DUMP C.2-018-0009

Chain of Custody:

Date 7/3/02	Relinquished By		Received By
Date	Relinquished By		Received By
Date	Relinquished By		Received By DIV. OF H&E LABORATORIES

2002 JUL -3 PM 3:48

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-04/98 *Instructions for this form are printed on the reverse side*

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 ~~ARKANSAS CITY~~ TOPEKA, KANSAS 66612-1367

Collection Site: B-1 (9-10') ARK CITY DUMP
Legal | Project Code | Name | PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ ____ ____ ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 0900
Name | Agency (Abbr) | Mo Day Yr | 24 Hour

Program Code:
EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
EJ or EZ for special projects

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2
☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8
☐ Acids Method: ☐ 625 ☐ 8270
☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2
☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil
☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

ONE 4oz SOIL JAR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: EJ or "EZ" for special projects billing - STATE GENERAL FUND
ARK CITY Dump C.D.-018-00059

Chain of Custody:

Date	7/3/02	Relinquished By		Received By	
Date		Relinquished By		Received By	
Date		Relinquished By		Received By	

DIV. OF H&E LABORATORIES
2002 JUL -3 PM 3:48

Additional Reports Routed To:

Name _____ Address _____
Name _____ Address _____
Name _____ Address _____

DHEL-04/98

Instructions for this form are printed on the reverse side

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-2 (4-5') ARK CITY DUMP
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 0935
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code:
EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
EJ OR "EZ" FOR SPECIAL PROJECTS

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2
☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8
☐ Acids Method: ☐ 625 ☐ 8270
☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2
☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil
☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

ONG 402 SEL.SAR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: EJ OR "EZ" FOR SPECIAL PROJECTS BILLING - STATE GENERAL FUND
ARK CITY DUMP C2-015-00009

Chain of Custody:

Date 7/3/02 Relinquished By [signature] Received By [signature]
Date _____ Relinquished By _____ Received By _____
Date _____ Relinquished By _____ Received By _____

DIV. OF H&E LABORATORIES
2002 JUL -3 PM 3:48

Additional Reports Routed To:

Name _____ Address _____
Name _____ Address _____
Name _____ Address _____

DHEL-04/98 *Instructions for this form are printed on the reverse side*

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-2 (9-10') ARK CITY DUMP
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 0945
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code:
EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
EJ OR "EZ" FOR SPECIAL PROJECTS

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

Inorganic Chemistry Laboratory

ONE 40Z. SOIL JAR

Bottle Nos.: Chem _____ DO _____ NUT _____ HM _____ CN _____ O&G _____ Phenol _____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: EJ OR "EZ" FOR SPECIAL PROJECTS BILLING - STATE GENERAL FUND
ARK CITY DUMP C2-015-00009

Chain of Custody:

Date 7/3/02 Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By _____

DIV. OF H&E LABORATORIES
2002 JUL -3 PM 3:48

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-04/98

Instructions for this form are printed on the reverse side

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-3 (4-5') ARK CITY Dump
Legal | Project Code | Name | PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BGE/ARS Date: 07-03-02 Time: 1020
Name | Agency (Abbr) | Mo Day Yr | 24 Hour

Program Code: EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
ET OR "EZ" FOR SPECIAL PROJECTS

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

ONE 40Z SOIL SMR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: ET OR "EZ" FOR special projects billing - STATE GENERAL FUND

Chain of Custody: ARK CITY DUMP C2-018-00009

Date 7/3/02 Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By _____

DIV. OF H&E LABORATORIES
2002 JUL -3 PM 3:49

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-04/98

Instructions for this form are printed on the reverse side

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rich Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-3 D (14-15') ARK CITY DUMP
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: E ___ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rich Weber KOHLBER/ARS Date: 07-03-02 Time: 1100
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code: EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
EJ OR "EZ" FOR SPECIAL PROJECTS

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

ONE 40Z SOIL JAR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem _____ DO _____ NUT _____ HM _____ CN _____ O&G _____ Phenol _____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: EJ OR "EZ" FOR SPECIAL PROJECTS BILLING - STATE GENERAL FUND
ARK CITY DUMP 02-08-0009

Chain of Custody:

Date 7/3/02 Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By _____

Date _____ Relinquished By _____ Received By _____

DIV. OF H&E LABORATORIES
2002 JUL -3 PM 3:49

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-04/98 *Instructions for this form are printed on the reverse side*

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-3 (9-10) ARK CITY Dump
Legal | Project Code | Name | PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 1035
Name | Agency (Abbr) | Mo Day Yr | 24 Hour

Program Code:

EA	EB	EC	ED	EE	EF	EG	(EJ)	EL	EP	ER	ET	EW	ES	FK	LM	SC	SE	SG	SN	SP	SW
PC	PD	PE	PI	PP	PT	PU	PV	WE	WI	HD	HF	HL	HS	RP	AR	GS	KC	US	AQ	RT	WC

ET or "EZ" for special projects

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

CNE 407 SOL SAR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by SW-846 7040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: ET or "EZ" for special projects billing - STATE GENERAL FUND
ARK CITY Dump C-03-015-00009

Chain of Custody:

Date	7/3/02	Relinquished By	RJR	Received By	
Date		Relinquished By		Received By	
Date		Relinquished By		Received By	

DIV. OF H&E LABORATORIES
2002 JUL -3 PM 3:49

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

DHEL-04/98

Instructions for this form are printed on the reverse side

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: _____

Collection Site: B-4 (4-5') ARK CITY Dump
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 1115
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code: EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
EJ or "EZ" for special projects

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

ONE 4oz SOIL JAR

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: EJ or "EZ" for special projects billing - STATE GENERAL FUND
ARK CITY Dump - C2-015-0000?

Chain of Custody:

Date	7/3/02	Relinquished By		Received By	
Date		Relinquished By		Received By	
Date		Relinquished By		Received By	DIV. OF H&E LABORATORIES

2002 JUL -3 PM 3:49

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

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Instructions for this form are printed on the reverse side

Kansas Department of Health and Environment
Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: B-4 (9-10') ARK CITY DUMP
Legal | Project Code | Name | PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: Water (Soil) Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BEE/ARS Date: 07-03-02 Time: 1130
Name | Agency (Abbr) | Mo Day Yr | 24 Hour

Program Code:

EA	EB	EC	ED	EE	EF	EG	(EJ)	EL	EP	ER	ET	EW	ES	FK	LM	SC	SE	SG	SN	SP	SW
PC	PD	PE	PI	PP	PT	PU	PV	WE	WI	HD	HF	HL	HS	RP	AR	GS	KC	US	AQ	RT	WC

EJ or "EZ" for special projects

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

CNE 402 SVL SAR2

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by SW-846 9040

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: EJ or "EZ" for special projects billing - STATE GENERAL FUND
ARK CITY DUMP C2-018-00009

Chain of Custody:

Date	7/3/02	Relinquished By	EJA	Received By	EMA
Date	_____	Relinquished By	_____	Received By	DIV. OF H&E LABORATORIES
Date	_____	Relinquished By	_____	Received By	_____

2002 JUL -3 PM 3:49

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

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Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: _____
Date Received: _____
Analysis Code: _____

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: TRIP BLANK - 1 (ARK CITY DUMP)
Legal | Project Code | Name | PWS Acct. No.

Site ID Number: ☐☐☐☐☐☐☐☐ Collection Depth: ____ Feet

Sample Type: (Water) Soil Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-01-02 Time: 1130
Name | Agency (Abbr) | Mo Day Yr | 24 Hour

Program Code:

EA	EB	EC	ED	EE	EF	EG	EJ	EL	EP	ER	ET	EW	ES	FK	LM	SC	SE	SG	SN	SP	SW
PC	PD	PE	PI	PP	PT	PU	PV	WE	WI	HD	HF	HL	HS	RP	AR	GS	KC	US	AQ	RT	WC

EJ OR "EZ" FOR SPECIAL PROJECTS

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other _____ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

UNPRESERVED VOA VIAL

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by EPA 150.1

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other _____

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: EJ OR "EZ" FOR SPECIAL PROJECTS BILLING - STATE GRANT/FUND ARK CITY DUMP C2-018-00009

Chain of Custody:

Date	7/3/02	Relinquished By		Received By	
Date		Relinquished By		Received By	
Date		Relinquished By		Received By	

DIV. OF H&E LABORATORIES
2002 JUL -3 PM 3:49

Additional Reports Routed To:

Name _____ Address _____

Name _____ Address _____

Name _____ Address _____

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Division of Health and Environmental Laboratories
Forbes Field, Building 740
Topeka, Kansas 66620-0001

Lab Number: ______
Date Received: ______
Analysis Code: ______

Sample Submission Form

Report To: Rob Weber Address: 1000 SW JACKSON, SUITE 410 TOPEKA, KANSAS 66612-1367

Collection Site: RINSEATE BLANK - 1
Legal Project Code Name PWS Acct. No.

Site ID Number: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Collection Depth: __ __ __ Feet

Sample Type: (Water) Soil Sediment Sludge Air Oil Solid Liquid Wipe Priority: (Regular) Moderate Urgent

Sample Collector: Rob Weber KDHE/BER/ARS Date: 07-03-02 Time: 1000
Name Agency (Abbr) Mo Day Yr 24 Hour

Program Code: EA EB EC ED EE EF EG (EJ) EL EP ER ET EW ES FK LM SC SE SG SN SP SW
PC PD PE PI PP PT PU PV WE WI HD HF HL HS RP AR GS KC US AQ RT WC
ES OR "EZ" for special projects

Organic Chemistry Laboratory

Check Desired Analysis: ☐ Other ______ VOC Sample Acidified: ☐

☐ Volatiles Method: ☐ 624 ☐ 8260 ☐ 524.2 ☐ Pesticides Method: ☐ 608 ☐ 8080 ☐ 507/8

☐ Acids Method: ☐ 625 ☐ 8270 ☐ Base/Neutrals Method: ☐ 625 ☐ 8270 ☐ 525.2

☐ PCB's Method: ☐ 608 ☐ 8080 ☐ Oil ☐ Herbicides Method: ☐ 615 ☐ 8150 ☐ 515.1

UNPRESERVED VOA VIAL

Inorganic Chemistry Laboratory

Bottle Nos.: Chem ____ DO ____ NUT ____ HM ____ CN ____ O&G ____ Phenol ____

Check Desired Analysis: ☑ Other pH by EPA 150.1

☐ Metals ☐ Mercury ☐ Mineral ☐ TCLP

Radiation Chemistry Laboratory

Check Desired Analysis: ☐ Other ______

☐ Gross Alpha ☐ Gross Uranium ☐ Ra-226 ☐ Ra-228

Sample Comments: ES or "EZ" for special projects billing - STATE GENERAL FUND
ARKGATE NUMBER 02-018-00609

Chain of Custody:

Date	7/3/02	Relinquished By	[signature]	Received By	[signature]
Date		Relinquished By		Received By	
Date		Relinquished By		Received By	DIV. OF H&E LABORATORIES 2002 JUL -3 PM 3:49

Additional Reports Routed To:

Name ______ Address ______
Name ______ Address ______
Name ______ Address ______

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APPENDIX E

DIVISION OF HEALTH & ENVIRONMENTAL LABORATORIES
Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

RECEIVED
JUL 17 2002
BUREAU OF ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400215PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-1 (4-5') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 08:40
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	8.16	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

Environmental Laboratories
Inorganic Chemistry (785) 296-1657
Organic Chemistry (785) 296-1647
Radiochemistry (785) 296-1629
Env. Microbiology (785) 296-0971

Roger H. Carlson, Ph.D., Director - (785) 296-1620
Laboratory Information and Reporting - (785) 296-1627
Laboratory Fax - (785) 296-1641

Health Laboratories
Diagnostic Micro. (785) 296-1636
Neonatal Screening (785) 296-1651
Serology (785) 296-1653
Virology (785) 296-1645

DIVISION OF HEALTH & ENVIRONMENTAL LABORATORIES

Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

RECEIVED
JUL 17 2002
BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400219PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-1D(14-15') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 10:00
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	8.10	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

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Kansas Department of Health and Environment
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JUL 17 2002
BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400216PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-1 (9-10') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 09:00
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	8.77	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
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Radiochemistry (785) 296-1629
Env. Microbiology (785) 296-0971

Roger H. Carlson, Ph.D., Director - (785) 296-1620
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Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

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JUL 17 2002
BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400217PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-2(4-5') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 09:35
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	*Analytical Result*	*Units*	*Analysis Date*	*Analytical Method*
pH	12.41	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

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Laboratory Information and Reporting - (785) 296-1627
Laboratory Fax - (785) 296-1641

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Neonatal Screening (785) 296-1651
Serology (785) 296-1653
Virology (785) 296-1645

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Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

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JUL 17 2002
BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400218PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-2(9-10') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 09:45
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	6.30	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

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Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

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ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400221PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-3(4-5') Ark City Dump C2-018000009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 10:20
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	12.44	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

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Inorganic Chemistry (785) 296-1657
Organic Chemistry (785) 296-1647
Radiochemistry (785) 296-1629
Env. Microbiology (785) 296-0971

Roger H. Carlson, Ph.D., Director - (785) 296-1620
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Diagnostic Micro. (785) 296-1636
Neonatal Screening (785) 296-1651
Serology (785) 296-1653
Virology (785) 296-1645

DIVISION OF HEALTH & ENVIRONMENTAL LABORATORIES
Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

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JUL 17 2002
BUREAU OF ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400223PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-3D(14-15') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 11:00
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	12.39	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

Environmental Laboratories
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Radiochemistry (785) 296-1629
Env. Microbiology (785) 296-0971

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Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

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BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400222PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-3(9-10') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 10:35
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	12.39	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

Environmental Laboratories
Inorganic Chemistry (785) 296-1657
Organic Chemistry (785) 296-1647
Radiochemistry (785) 296-1629
Env. Microbiology (785) 296-0971

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Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

RECEIVED
JUL 17 2002
BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400224PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-4(4-5') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 11:15
Date/Time Received: 07/03/02 15:49

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	8.32	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

DIVISION OF HEALTH & ENVIRONMENTAL LABORATORIES

Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

RECEIVED
JUL 17 2002
BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400226PT
4EM80
Site ID:
Account Code: EZ

Collection Location: B-4(9-10') Ark City Dump C2-018-00009
Collector: Rob Weber
Matrix: Soil
Collect Depth:
Date/Time Collected: 07/03/02 11:30
Date/Time Received: 07/03/02 15:49

Sample Comments:

Parameter	*Analytical Result*	*Units*	*Analysis Date*	*Analytical Method*
pH	12.47	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

Environmental Laboratories
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Organic Chemistry (785) 296-1647
Radiochemistry (785) 296-1629
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Serology (785) 296-1653
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DIVISION OF HEALTH & ENVIRONMENTAL LABORATORIES
Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

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JUL 17 2002
BUREAU OF
ENVIRONMENTAL REMEDIATIO

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 40021
4
Site ID:
Account Code:

Collection Location: Trip Blank-1 ARk City Dump C2-018-00009
Collector: Rob Weber
Matrix: Water
Collect Depth:
Date/Time Collected: 07/03/02 11:30
Date/Time Received: 07/03/02 15:49

Sample Comments:

Parameter	*Analytical Result*	*Units*	*Analysis Date*	*Analytical Method*
pH	6.06	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

Environmental Laboratories
Inorganic Chemistry (785) 296-1657
Organic Chemistry (785) 296-1647
Radiochemistry (785) 296-1629
Env. Microbiology (785) 296-0971

Roger H. Carlson, Ph.D., Director - (785) 296-1620
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Laboratory Fax - (785) 296-1641

Health Laboratories
Diagnostic Micro. (785) 296-1636
Neonatal Screening (785) 296-1651
Serology (785) 296-1653
Virology (785) 296-1645

DIVISION OF HEALTH & ENVIRONMENTAL LABORATORIES
Kansas Department of Health and Environment
Forbes Field, Bldg. 740, Topeka, Kansas 66620-0001

RECEIVED
JUL 17 200
BUREAU OF
ENVIRONMENTAL REMEDIATION

REPORT OF ANALYSIS

INORGANIC CHEMISTRY

Report To: Bureau of Env. Remediation
Curtis SOB, Suite 410
ATTN: Rob Weber
Topeka KS 66612

Lab Number: 400220PT
4EM80
Site ID:
Account Code: EZ

Collection Location: Rinsate Blank-1
Collector: Rob Weber
Matrix: Water
Collect Depth:
Date/Time Collected: 07/03/02 10:00
Date/Time Received: 07/03/02 15:48

Sample Comments:

Parameter	Analytical Result	Units	Analysis Date	Analytical Method
pH	6.00	pH unit	07/15/02	EPA 150.1

Reporting Analyst: REH
Date Reported: 07/16/02
Copies To: File

< - Not Detected at Indicated Level
* - Holding Time Exceeded

Environmental Laboratories
Inorganic Chemistry (785) 296-1657
Organic Chemistry (785) 296-1647
Radiochemistry (785) 296-1629
Env. Microbiology (785) 296-0971

Roger H. Carlson, Ph.D., Director - (785) 296-1620
Laboratory Information and Reporting - (785) 296-1627
Laboratory Fax - (785) 296-1641

Health Laboratories
Diagnostic Micro. (785) 296-1636
Neonatal Screening (785) 296-1651
Serology (785) 296-1653
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